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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,527	12/05/2001	Clifford A. Mohwinkel	END058	2816

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EXAMINER
RAIZEN, DEBORAH A

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

P 5

Office Action Summary	Application No.	Applicant(s)	
	10/010,527	MOHWINKEL, CLIFFORD A.	
	Examiner	Art Unit	
	Deborah A. Raizen	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,6,7,10,11,14-17,20 and 26-28 is/are rejected.

7)☒ Claim(s) 5,8,9,12,13,18,19,21-25 and 29 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 05 December 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s) _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other

DETAILED ACTION

Claim Objections

1. Claims 4, 13, 14, 24, 25, and 27 are objected to because of the following informalities:

Claims 4 and 27 recite the method step—"is [are each] manually manipulated"—in claims directed to a system or device (a different statutory category). The claims are examined below as understood.

Claims 13 and 14 are directed to a system, even though they depend on claim 10, which is directed to a method. Conversely, claim 24, which depends on claim 13, is directed to a method. Claim 25 depends on claim 24 and is therefore subject to the same objection.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 26, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Boyle et al. (EP 1 014 438 A2). In regard to claim 26, Boyle discloses an inspection device comprising: a lens (12 in Fig. 1) that defines a lens plane, an electronic image receiving device (10 in Fig. 1) that defines an electronic image-receiving device plane, and a workpiece (2 in Fig.

1) that defines a work plane, wherein the lens plane, the electronic image receiving device plane, and the work plane are aligned according to a Sheimpflug principle (abstract).

In regard to claim 27, as understood, in the Boyle device a position of the lens and a position of the image-receiving device are each manually manipulated with respect to the work plane (Boyle's claim 10, third step, line 1 of page 8: any movement can inherently be caused manually).

In regard to claim 28, in the Boyle device a first alignment arm is used to align the lens with respect to the work plane, and a second alignment arm is used to align the image-receiving device with respect to the work plane (the alignment arms are housings 12 and 10, respectively, in Fig. 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 3, 4, 6, 7, 10, 11, 14, 15, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark, III et al. (5,027,143) in view of Eastcott (5,592,331).

In regard to claim 1, Clark discloses an imaging system comprising: an object plane (col. 2, lines 10-11) that defines an object plane axis perpendicular to the object plane; an image receiving device (image screen 20 in Fig. 1) positioned oblique to the object plane axis (inherently disclosed because of the requirement of satisfying Scheimpflug's law, col. 2, lines 4-

13); a lens (16 in Fig. 1) positioned oblique to the object plane axis (inherently disclosed because of the requirement of satisfying Scheimpflug's law), wherein the image-receiving device and the lens are each positioned with respect to the object-plane axis such that the entire object plane is in focus on the image-receiving device (col. 3, lines 6-9 and col. 2, lines 4-13; see also Eastcott, col. 3, lines 20-24, not cited here for obviousness). Clark does not disclose that the image-receiving device is chosen from the group consisting of an electronic image receiving device array and a microscope. Eastcott, however, does disclose that video cameras typically have an array of CCD (Charge-Coupled Device) as their image-receiving device (col. 1, lines 20-24). Furthermore, such electronic imaging arrays have many advantages, some of which are size reduction, image-storage capacity, and ease of editing and processing. Therefore, it would have been obvious to one of ordinary skill in the art to provide an electronic image receiving device array, such as a CCD array, as the image-receiving device because it would allow for size reduction, storage, and ease of editing and processing.

In regard to claim 2, in the Clark system a plane defined by the image receiving device, and a plane defined by the lens each intersect the object plane at a Sheimpflug line (col. 2, lines 3-13).

In regard to claim 3, in the Clark system, the image-receiving device and the lens are each pivotally positioned within a main body (a camera, col. 3, lines 25-27) positioned oblique to the object plane axis (inherently disclosed because of the need for Scheimpflug's law).

In regard to claim 4, as understood, in the Clark system, the main body is manually manipulated such that the entire object plane is in focus on the image-receiving device (a field camera, col. 3, line 26, is inherently manipulated by hand).

In regard to claim 6, in the Clark system, the image receiving device and the lens are each adjustably positioned with respect to the object plane axis such that the entire object plane is in focus on the image-receiving device (cols. 6-8, esp. col. 6, lines 60-65 and col. 8, lines 8-11).

In regard to claim 7, in the Clark system, the main body (the camera) defines an optical axis that extends from the main body to a point where the object plane axis intersects the object plane (an infinite number of arbitrary points in the object plane), wherein the object plane axis and the optical axis define an angle therebetween, and wherein the angle is greater than zero degrees and less than ninety degrees (this limitation is inherent in the use of a camera because any real object will have some facet whose planar extension defines an angle with the optical axis of the camera that is between zero and ninety degrees).

In regard to claim 10, Clark discloses a method of focusing (title) an entire object plane, comprising the steps of providing an image-receiving device (image screen 20 in Fig. 1) along an optical axis positioned oblique to an object plane (inherently disclosed because of the requirement of satisfying Scheimpflug's law, col. 2, lines 4-13); providing a lens along the optical axis (16 in Fig. 1); positioning the image receiving device so that an image receiving plane of the image receiving device intersects the object plane at a Sheimpflug line (col. 6, lines 60-63 and col. 8, lines 19-20), and positioning the lens so that a lens plane of the lens intersects the object plane at the Sheimpflug line (col. 8, lines 7-11), such that the entire object plane is in focus on the image receiving device (col. 3, lines 6-9 and col. 2, lines 4-13; see also Eastcott, col. 3, lines 20-24, not cited here for obviousness). Clark does not disclose that the image-receiving device is chosen from the group consisting of an electronic image receiving device and a

microscope. However, as explained for claim 1 above (in view of Eastcott), it would have been obvious to one of ordinary skill in the art to provide an electronic image-receiving device, such as a CCD array, because it would allow for size reduction, storage, and ease of editing and processing.

In regard to claim 11, in the Clark method the step of positioning the image-receiving device is conducted manually (col. 6, line 60) and the step of positioning the lens is conducted manually (col. 8, lines 7-11).

In regard to claim 14, as understood, in the Clark method the image-receiving device comprises a charged-coupled device array. Clark does not disclose this limitation. However, as explained for claim 1 above (in view of Eastcott), it would have been obvious to one of ordinary skill in the art to provide a CCD (charged-coupled device) array, because it would allow for size reduction, storage, and ease of editing and processing.

In regard to claim 15, Clark discloses an optical device (a camera, col. 3, lines 25-27) comprising: an image receiving device (image screen 20 in Fig. 1) adjustably positioned along an optical axis oblique to an object plane (inherently disclosed because of the requirement of satisfying Scheimpflug's law, col. 2, lines 4-13); and a lens (16 in Fig. 1) adjustably positioned along the optical axis. Clark does not disclose that the image-receiving device is chosen from the group consisting of an electronic image-receiving device and a microscope. However, as explained for claim 1 above (in view of Eastcott), it would have been obvious to one of ordinary skill in the art to provide an electronic image-receiving device, such as a CCD array, because it would allow for size reduction, storage, and ease of editing and processing.

In regard to claim 16, in the Clark device, the image receiving device defines a plane that intersects the object plane such that the entire object plane is in focus on the image receiving device and wherein the lens defines a plane that intersects the object plane such that the entire object plane is in focus on the image receiving device (col. 2, lines 4-13).

In regard to claim 17, in the Clark device, the optical device has a main body aligned with the optical axis (a camera inherently has a main body aligned with the optical axis) and wherein the image-receiving device and the lens are each pivotally secured to the main body (Fig. 1 and col. 3, lines 25-27: the system of Fig. 1 is integrated with a camera).

In regard to claim 20, in the Clark device, the object plane is adjustable with respect to the image-receiving device and the lens such that the entire object plane is in focus on the image-receiving device (the Clark device satisfies Scheimpflug's Law; furthermore, the object plane is inherently adjustable with respect to the imaging device and lens because, even if the object itself is fixed, the imaging device and lens are adjustable).

Allowable Subject Matter

6. Claims 5, 8, 9, 12, 18, 19, 21, 22, 23, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of claims 5, 8, 9, 12, 18, 19, 21, 22, 23, and 29, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

The prior art fails to teach a combination of all the claimed features as presented in claims 5, 21, 22, 23, and 29. For example, these features include the detailed structure recited in the respective base claims and also a motor that manipulates the image-receiving device and the lens to get the entire object plane in focus.

The prior art fails to teach a combination of all the claimed features as presented in claims 8, 9, 12, 18, and 19. For example, these features include the detailed structure recited in the respective base claims and also further detailed structure, especially a common pivot axis for the arms.

8. Claims 13, 24, and 25 would be allowable if rewritten to overcome an objection regarding the mixing of method and system claims, set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of claims 13, 24, and 25, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in claim 13. For example, these features include the detailed method and structure recited in claim 10 and also a motor system for moving both the image-receiving device and lens with respect to the object plane. Claims 24 and 25 depend on claim 13 and therefore have allowable subject matter as well.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Scheimpflug (751,347) explains the scheimpflug condition. Bayley et al. (4,978,860) and McQueen (Pub. No.: US 2002/0195550 A1) meet the limitations of several claims, already rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah A. Raizen whose telephone number is (703) 305-7940. The examiner can normally be reached on Monday-Friday, from 8 a.m. to 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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February 22, 2003

Scott J. Sugarman
Primary Examiner